AFCTN Test Report 93-036

AFCTB-ID 92-084

Raster Transfer Test

Using:

Image Memory Systems' Data

MIL-R-28002A (Raster)

Quick Short Test Report

25 November 1992

Prepared for

Electronic Systems Center

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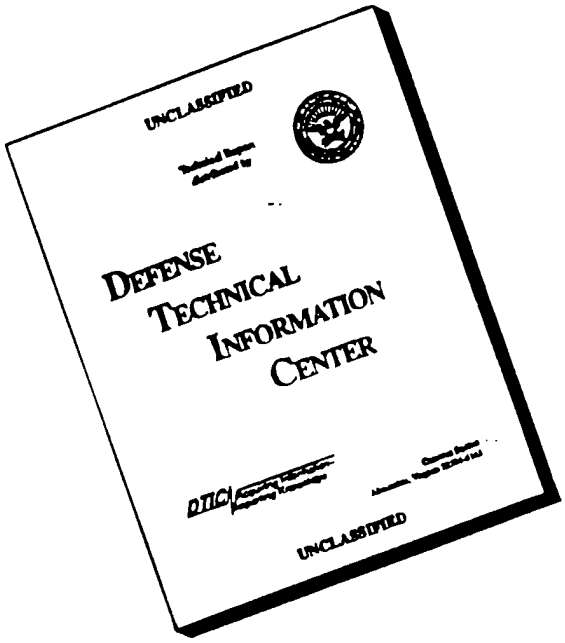

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25 November 1992

Prepared By
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, required specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving and evaluation of their latest implementation (intrepretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test reported in this QSTR was to analyze Image Memory Systems' interpretation and use of the CALS standards in transferring raster data. Image Memory Systems used its CALS Technical Data Interchange System to produce data in accordance with the standards and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 92-084

Date of Evaluation: 25 November 1992

Evaluator:
George Elwood
Air Force CALS Test Bed
Dpt 2 HQ ESC/ENCP
4027 Colonel Glenn Hwy
Suite 200
Dayton, OH 45431-1672

Data Originator:
John Pugnale
Image Memory Systems
6000 Webster Street
Dayton, OH 45414

Data Description: Technical Manual Test
53 Document Declaration files
71 Raster files

Data Source System:

Raster

HARDWARE
Unknown

SOFTWARE
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)
SUN 3/280
AFCTN *Tapetool v1.2.8 UNIX*

MIL-R-28002 (Raster)
SUN SparcStation 2
ArborText *g42tiff*
AFCTN *validg4*
AFCTN *calstb.475*
IGES Data Analysis (IDA) *IGESView v3.0*
Island Graphics *IslandPaint v3.0*
Cheetah
Inset Systems *HiJaak v2.02*
Corel *Ventura Publisher*

Standards Tested:
MIL-STD-1840A
MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the Air Force CALS Test Bed contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The 1840A Tape was run through the AFCTB *Tapetool v1.2.8* utility. While evaluating the contents of the tape labels, 557 errors and 207 notes were reported. An additional 57 notes were reported during the evaluation of the Tape Catalog. All of the errors are shown in Appendix A, Sections One and Two.

Many of the errors related to the tape label Record Length field for Type D files. Type D files contain variable length records that do not span blocks. All of the Type D files written on the tape were flagged with an illegal value for Record Length. The D0XX files were expected to be Type D according to MIL-STD-1840A. The AFCTN *Tapetool* Software is expecting a value of 260 in the Record Length field but encountered a record length 256. MIL-STD-1840A para. 5.2.1.3 requires the variable record size be a maximum of 256 bytes. ANSI X3.27 para. 7.2.3 further states that the length of a Record Control Word (RCW) must be included in a Measured

Data Unit (MDU) record length computation. This adds four bytes to the 256 for an MDU total of 260 bytes. ANSI X3.27 para. 8.5.2.6 states that the Record Length field for Type D files shall contain the maximum length of an MDU. While MIL-STD-1840A permits variable length records, some software programs are sensitive to the number 260 because it is used to limit the record size when unblocking data. Some systems need this value to declare the maximum allowable record size as an attribute of a file when it is created.

A note was reported on the tape label version. MIL-STD-1840A permits the use of both versions three and four. The use of the most current standard should be used and noted.

All files were reported with characters in a reserved block defined by ANSI 3.27. This error was reported in both the HDR2 and EOF2 files.

```
HDR2D0204800256                    B              00

*** ERROR (ANSI X3.27; 8.5.1.1) - Columns 53-80 are reserved
    for future standardization and must be spaces.
```

Most of the Raster files had an incomplete last block note. This would indicate that the last block of data was not padded to the required length. This could result in the last block of data being deleted when read by some tape drives.

```
*** NOTE - Last block was incomplete. Short blocks are
    proned to be interpreted as noise by some tape drives.
    Tape Label => 2048, Actual => 640, Block Number => 23
```

3.2.2 Declaration and Header Fields

In the Document Declaration Files and data file headers, 354 errors and 354 notes were reported. In all Document Declaration files, an Invalid change level was flagged. MIL-STD-1840A, para. 5.1.1.2 shows the change level as "ORIGINAL". The value for chglvl is either the word "ORIGINAL" or the revision level, change level, and then the change date.

```
chglvl: A
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid change level encountered.
*** NOTE (MIL-STD-1840A; 5.1.1.2) - Change level should be the word ORIGINAL or
    a Revision Number followed by a Change Level Number followed by
    a Change Level Date. They should be separated by a comma or space.
```

Errors were also reported with record doctyp. No value was given for this record. The record must contain a value of "NONE".

```
doctyp:
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Space missing after Document Declaration
    header field.
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value missing after Document Declaration
    header field.
*** NOTE - The header record will be given the value NONE.
*** NOTE - Correction made in new Document Declaration Header File.
```

All Raster file headers reported an error with the srcdocid record. MIL-STD-1840A does not permit more than one space after the colon. All of these files contained multiple spaces.

```
srcdocid:   A3023860       80063 A              00010007UDUHN0001 A
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new %s Header File.
```

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on the tape.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included on the tape.

6. Raster Analysis

Because of the number of Raster files on the tape, a selection was made for closer inspection. A larger selection was made and checked using the AFCTN *validg4* utility. All of the selected files were reported as meeting the CALS MIL-R-28002A specification.

The six selected files were imported into the AFCTN *calstb.475*. No problems were reported. The files appear to be scanned straight. Minor orphan pixels were noted on some of the images.

The files were converted using ArborText's *g42tiff utility*. No problems were encountered. The resulting files were imported into Island Graphics' *IslandPaint*, displayed and printed.

The files were converted to an IMG format using Inset Systems' *HiJaak*. No problems were reported. The resulting files were imported into Corel's *Ventura Publisher* and printed.

The files were read into IDA's *IGESView* with CALS Raster options. No errors were reported. The hard copies of this process are included in the Appendix.

The files were converted using Rosetta Technologies' *Prepare* without a reported problem. The resulting files were read into *Preview*, displayed and printed.

The Raster files meet the CALS MIL-R-28002A specification.

7. CGM Analysis

No Computer Graphic Metafile (CGM) files were included on the tape.

8. Conclusions and Recommendations

In summary, the physical structure of the tape from Image Memory Systems did not meet the CALS MIL-STD-1840A requirements. There were numerous reported errors with the tape labels and CALS headers.

The Raster files on the tape meet the CALS MIL-R-28002A specification.

Due to the physical structure errors, the tape from Image Memory Systems does not meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

```
Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Wed Nov 25 09:06:32 1992

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set116

                                                                    Page: 1

                                                 Record
                                                 Format/    Block      Selected/
File Name              File Type                 Length  Length/Total  Extracted
-------------------------------------------------------------------------------
D001                   Document Declaration      D/00256 02048/000001  Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size
    encountered. Header => 256, Expected => 260
*** NOTE (ANSI X3.27; 8.5.2.6) - Record Length for Recording Format Type D
    shall be the maximum length of a Measured Data Unit (MDU).
*** NOTE (ANSI X3.27; 7.2.3) - A variable length record shall be contained
    in an MDU. An MDU consists of a four byte Record Control Word (RCW)
    followed immediately by the variable record.
*** NOTE (ANSI X3.4) - A Record Control Word shall consist of four characters
    that express the sum of the lengths of the RCW and the variable record.
D002                   Document Declaration      D/00256 02048/000001  Extracted
*** NOTE (MIL-STD-1840A; 5.2.1.3) - Unexpected maximum variable record size
    encountered. Header => 256, Expected => 260

                    <<<<< PART OF LOG REMOVED HERE >>>>>

D001R001                 Raster                  F/00128 02048/000017  Extracted
D001R002                 Raster                  F/00128 02048/000017  Extracted

                    <<<<< PART OF LOG REMOVED HERE >>>>>
```

```
D050R001                Raster                  F/00128 02048/000023  Extracted

Catalog Process terminated with 0 error(s), 0 warning(s), and 53 note(s).
```

9.2 Tape Evaluation Log

```
Air Force CALS Test Network Tape Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Wed Nov 25 09:02:41 1992

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1000001                              MAGNAVOX REGEN                          3

  Label Identifier: VOL1
  Volume Identifier: 000001
  Volume Accessibility:
  Owner Identifier: MAGNAVOX REGEN
  Label Standard Version: 3

*** NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version
    should be 4 to represent the current level of ANSI X3.27.

HDR1D001            0000010001000100000   92328 00000 000000

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: 000001
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number:
  Creation Date:  92328
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:
```

```
HDR2D0204800256                         B           00

  Label Identifier: HDR2
  Recording Format: D
  Block Length: 02048
  Record Length: 00256
  Offset Length:  0

*** ERROR (ANSI X3.27; 8.5.1.1) - Columns 53-80 are reserved
    for future standardization and must be spaces.

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 1.

************ Tape Mark ***************

EOF1D001              000001000100010000   92328 00000 000001

  Label Identifier: EOF1
  File Identifier: D001
  File Set Identifier: 000001
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number:
  Creation Date:  92328
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000001
  Implementation Identifier:

EOF2D0204800256                         B           00

  Label Identifier: EOF2
  Recording Format: D
  Block Length: 02048
  Record Length: 00256
  Offset Length:  0

*** ERROR (ANSI X3.27; 8.5.1.1) - Columns 53-80 are reserved
    for future standardization and must be spaces.

************ Tape Mark ***************
```

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

```
************ Tape Mark ***************

HDR1D050R001          000001000102780000   92328 00000 000000

  Label Identifier: HDR1
  File Identifier: D050R001
  File Set Identifier: 000001
  File Section Number: 0001
  File Sequence Number: 0278
  Generation Number: 0000
  Generation Version Number:
  Creation Date:  92328
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2F0204800128                B            00

  Label Identifier: HDR2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length:  0

*** ERROR (ANSI X3.27; 8.5.1.1) - Columns 53-80 are reserved
    for future standardization and must be spaces.

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

*** NOTE - Last block was incomplete.  Short blocks are
    proned to be interpreted as noise by some tape drives.
    Tape Label => 2048, Actual => 640, Block Number => 23

  Number of data blocks read = 23.

************ Tape Mark ***************

EOF1D050R001          000001000102780000   92328 00000 000023

  Label Identifier: EOF1
  File Identifier: D050R001
```

```
  File Set Identifier: 000001
  File Section Number: 0001
  File Sequence Number: 0278
  Generation Number: 0000
  Generation Version Number:
  Creation Date:  92328
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000023
  Implementation Identifier:

EOF2F0204800128                         B           00

  Label Identifier: EOF2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length:  0

*** ERROR (ANSI X3.27; 8.5.1.1) - Columns 53-80 are reserved
    for future standardization and must be spaces.

************ Tape Mark ***************

************ Tape Mark ***************

############ End of Volume 000001 ###############

############ End Of Tape File Set ###############

Deallocating /dev/rmt0...

Tape Import Process terminated with 557 error(s), 0 warning(s),
and 207 note(s).
```

9.3 Tape File Set Validation Log

```
Air Force CALS Test Network File Set Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    MIL-R-28002 (1989) - Raster Graphics Representation In Binary
                         Format, Requirements For

Wed Nov 25 09:06:35 1992

MIL-STD-1840A File Set Evaluation Log

File Set: Set116

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: Magnavox Electronic Systems Co, 1313 Production Road, Ft Wayne, IN 46808, Cage
37695
srcdocid: A3023860
srcrelid: DAAB07-84-C-D001
chglvl: A
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Invalid change level encountered.
*** NOTE (MIL-STD-1840A; 5.1.1.2) - Change level should be the word ORIGINAL or
    a Revision Number followed by a Change Level Number followed by
    a Change Level Date. They should be separated by a comma or space.
dteisu: 19921120
dstsys: U S Army Communications-Electronics Command, Ft Monmouth, NJ 07705, Cage Code
dstdocid: A3023860
dstrelid: DAAB07-84-C-D001
dtetrn: 19921120
dlvacc: SLIN 0005AL, CDRL 17-11, DI-E-7031, W/ADD,19AUG82&W/Supp,21Oct82
filcnt: R7
ttlcls: Unclass
doccls: Unclass
doctyp:
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Space missing after Document Declaration
    header field.
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value missing after Document Declaration
    header field.
*** NOTE - The header record will be given the value NONE.
*** NOTE - Correction made in new Document Declaration Header File.
docttl: SEMICONDUCTOR DEVICE,DIODE - LIGHT EMITTING

3 error(s), 0 warning(s), and 3 note(s) were encountered
```

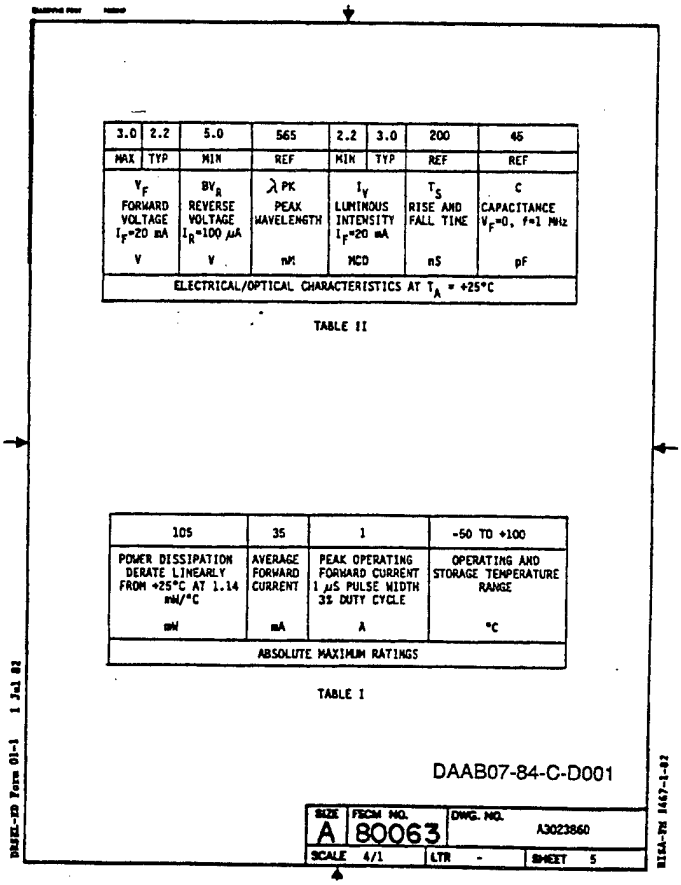
```
in Document Declaration File D001.


Found file: D001R001
Renaming file from => /cals/tapetool8/Set116/D001R001
              to => /cals/tapetool8/Set116/D001/D001R001
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid:   A3023860       80063 A              00010007UDUHN0001 A
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new %s Header File.
dstdocid: NONE
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001680,002224
rdensty: 0200
notes: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered
 in Raster File D001R001.
Saving Raster Header File: D001R001_HDR
Saving Raster Data File: D001R001_GR4

Found file: D001R002
Renaming file from => /cals/tapetool8/Set116/D001R002
              to => /cals/tapetool8/Set116/D001/D001R002
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid:   A3023860       80063 A              00020007UDUHN0002 A
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new %s Header File.
dstdocid: NONE
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001664,002224
rdensty: 0200
notes: NONE
```

```
1 error(s), 0 warning(s), and 1 note(s) were encountered
 in Raster File D001R002.
Saving Raster Header File: D001R002_HDR
Saving Raster Data File: D001R002_GR4

                    <<<<< PART OF LOG REMOVED HERE >>>>>

Found file: D050R001
Renaming file from => /cals/tapetool8/Set116/D050R001
              to => /cals/tapetool8/Set116/D050/D050R001
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid:   MPA37659       80063 A              00010001UDUHN0001 D
*** ERROR (MIL-STD-1840A; 5.1.4) - Value contains leading spaces.
*** NOTE - Correction made in new %s Header File.
dstdocid: NONE
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 006608,004400
rdensty: 0200
notes: NONE

1 error(s), 0 warning(s), and 1 note(s) were encountered
 in Raster File D050R001.
Saving Raster Header File: D050R001_HDR
Saving Raster Data File: D050R001_GR4

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

A total of 4 error(s), 0 warning(s), and 4 note(s) were
encountered in Document D050.

A grand total of 354 error(s), 0 warning(s), and 354 note(s) were
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.
```

10. Appendix B - Detail Raster Analysis

10.1 File D001R005

10.1.1 Output IGESView



3.0 MAX	2.2 TYP	5.0 MIN	565 REF	2.2 MIN	3.0 TYP	200 REF	45 REF
V_F FORWARD VOLTAGE I_F=20 mA		BV_R REVERSE VOLTAGE I_R=100 µA	λ PK PEAK WAVELENGTH	I_V LUMINOUS INTENSITY I_F=20 mA		T_S RISE AND FALL TIME	C CAPACITANCE V_F=0, f=1 MHz
V		V	nM	MCD		nS	pF
ELECTRICAL/OPTICAL CHARACTERISTICS AT T_A = +25°C							

TABLE II

105	35	1	-50 TO +100
POWER DISSIPATION DERATE LINEARLY FROM +25°C AT 1.14 mW/°C	AVERAGE FORWARD CURRENT	PEAK OPERATING FORWARD CURRENT 1 µS PULSE WIDTH 3% DUTY CYCLE	OPERATING AND STORAGE TEMPERATURE RANGE
mW	mA	A	°C
ABSOLUTE MAXIMUM RATINGS			

TABLE I

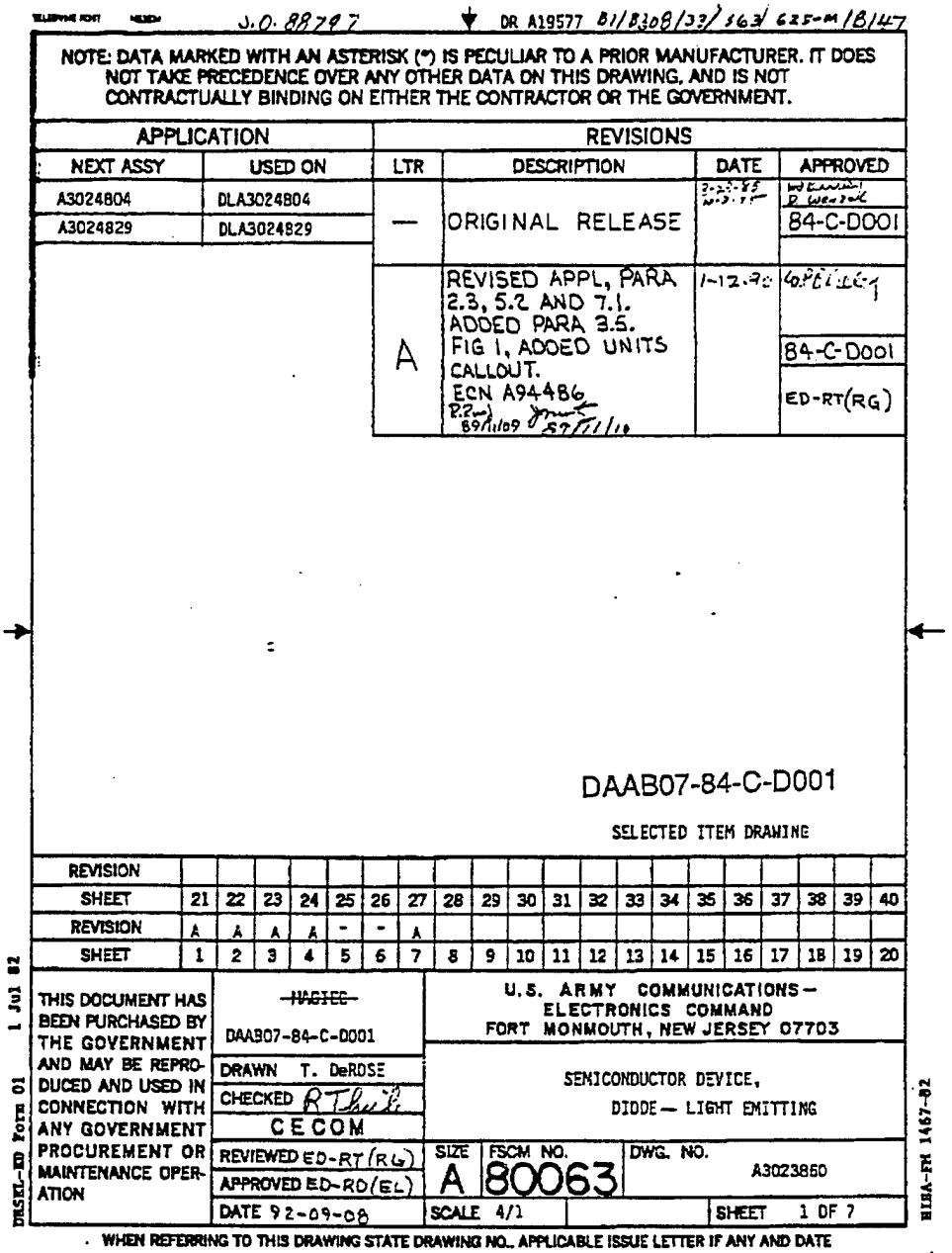
DAAB07-84-C-D001

SIZE	FSCM NO.	DWG. NO.
A	80063	A3023860
SCALE 4/1	LTR -	SHEET 5

DRAW-29 Form 01-1 1 Jul 82

DISA-PM 1467-1-82

10.1.2 Output Preview



J.O. 88797 DR A19577 B1/B308/33/563/625-M/B147

NOTE: DATA MARKED WITH AN ASTERISK (*) IS PECULIAR TO A PRIOR MANUFACTURER. IT DOES NOT TAKE PRECEDENCE OVER ANY OTHER DATA ON THIS DRAWING, AND IS NOT CONTRACTUALLY BINDING ON EITHER THE CONTRACTOR OR THE GOVERNMENT.

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	LTR	DESCRIPTION	DATE	APPROVED
A3024804	DLA3024804	—	ORIGINAL RELEASE	2-23-85	W Emmi R Wenzel 84-C-D001
A3024829	DLA3024829	A	REVISED APPL, PARA 2.3, 5.2 AND 7.1. ADDED PARA 3.5. FIG 1, ADDED UNITS CALLOUT. ECN A94486 P.2 89/11/09	1-12-90	84-C-D001 ED-RT(RG)

DAAB07-84-C-D001

SELECTED ITEM DRAWING

REVISION																			
SHEET	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REVISION	A	A	A	A	-	-	A													
SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

DRSEL-ED Form 01 1 Jul 82

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CHECKED R Thiel
CECOM
REVIEWED ED-RT(RG)
APPROVED ED-RD(EL)
DATE 92-09-08

U.S. ARMY COMMUNICATIONS-ELECTRONICS COMMAND
FORT MONMOUTH, NEW JERSEY 07703

SEMICONDUCTOR DEVICE, DIODE- LIGHT EMITTING

SIZE A | FSCM NO. 80063 | DWG. NO. A3023860

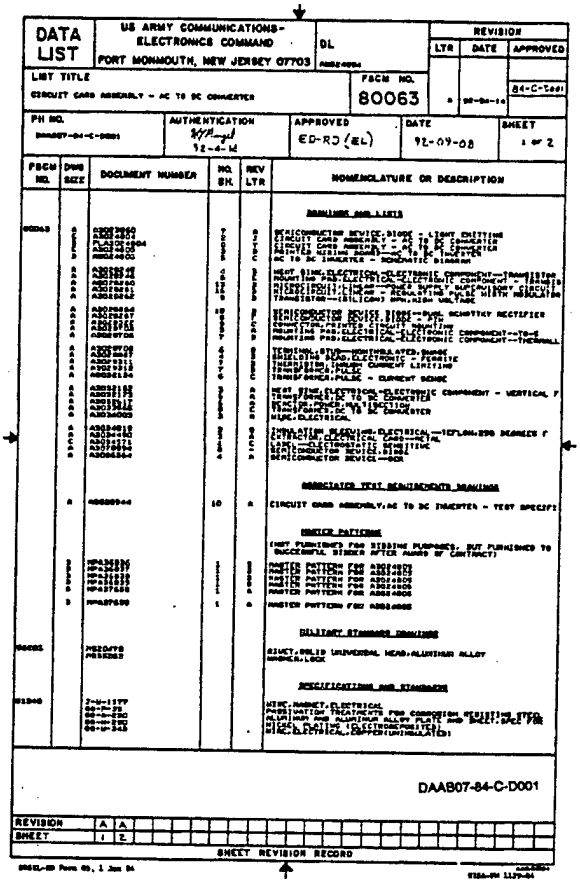
SCALE 4/1 | SHEET 1 OF 7

MISA-FM 1467-82

WHEN REFERRING TO THIS DRAWING STATE DRAWING NO., APPLICABLE ISSUE LETTER IF ANY AND DATE

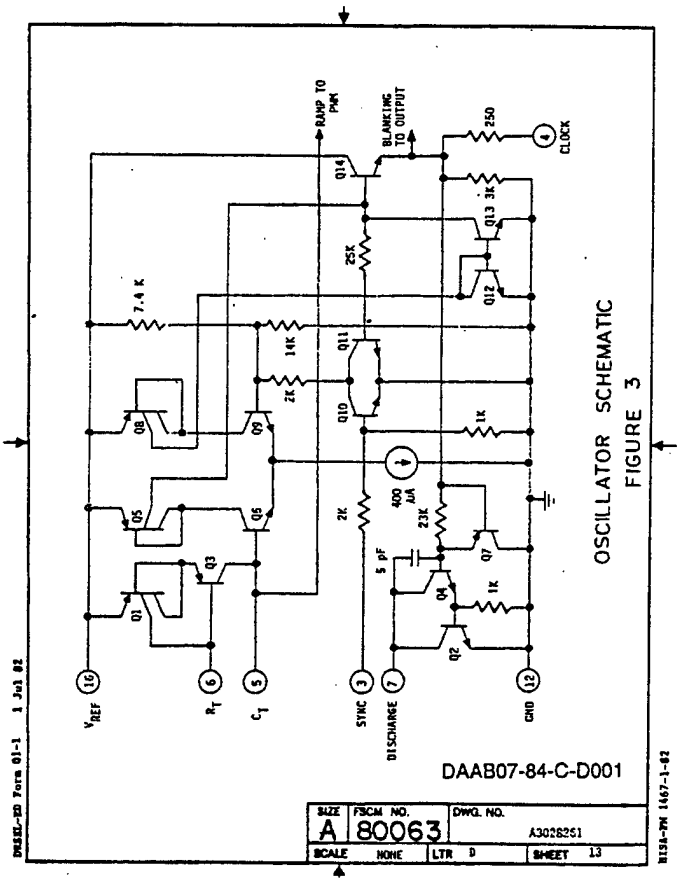
10.2 File D010R001

10.2.1 Output IGESView



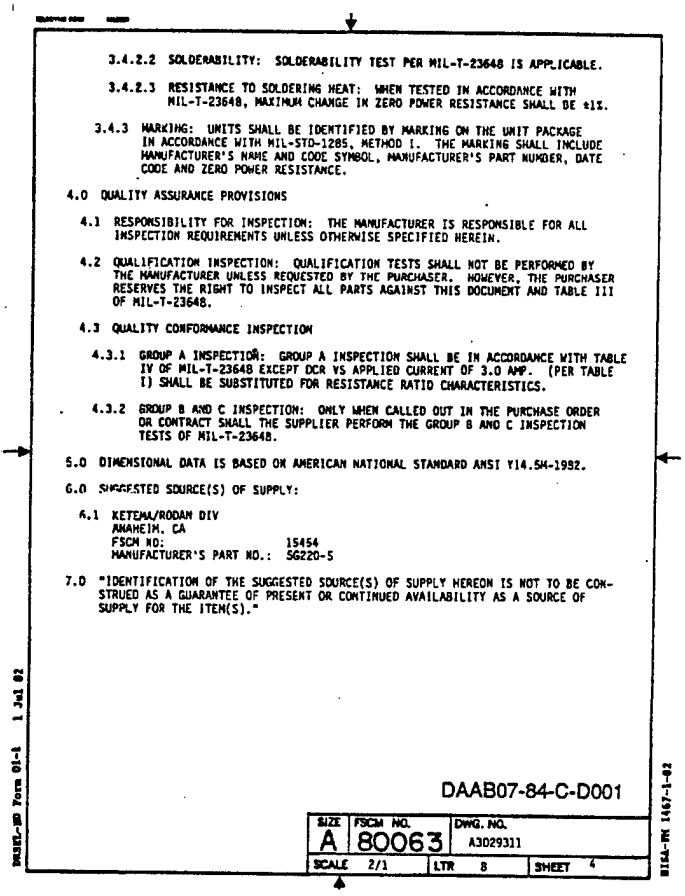
10.3 File D018R013

10.3.1 Output IGESView



10.4 File D029R004

10.4.1 Output IGESView



3.4.2.2 SOLDERABILITY: SOLDERABILITY TEST PER MIL-T-23648 IS APPLICABLE.

3.4.2.3 RESISTANCE TO SOLDERING HEAT: WHEN TESTED IN ACCORDANCE WITH MIL-T-23648, MAXIMUM CHANGE IN ZERO POWER RESISTANCE SHALL BE ±1%.

3.4.3 MARKING: UNITS SHALL BE IDENTIFIED BY MARKING ON THE UNIT PACKAGE IN ACCORDANCE WITH MIL-STD-1285, METHOD I. THE MARKING SHALL INCLUDE MANUFACTURER'S NAME AND CODE SYMBOL, MANUFACTURER'S PART NUMBER, DATE CODE AND ZERO POWER RESISTANCE.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 RESPONSIBILITY FOR INSPECTION: THE MANUFACTURER IS RESPONSIBLE FOR ALL INSPECTION REQUIREMENTS UNLESS OTHERWISE SPECIFIED HEREIN.

4.2 QUALIFICATION INSPECTION: QUALIFICATION TESTS SHALL NOT BE PERFORMED BY THE MANUFACTURER UNLESS REQUESTED BY THE PURCHASER. HOWEVER, THE PURCHASER RESERVES THE RIGHT TO INSPECT ALL PARTS AGAINST THIS DOCUMENT AND TABLE III OF MIL-T-23648.

4.3 QUALITY CONFORMANCE INSPECTION

4.3.1 GROUP A INSPECTION: GROUP A INSPECTION SHALL BE IN ACCORDANCE WITH TABLE IV OF MIL-T-23648 EXCEPT DCR VS APPLIED CURRENT OF 3.0 AMP. (PER TABLE I) SHALL BE SUBSTITUTED FOR RESISTANCE RATIO CHARACTERISTICS.

4.3.2 GROUP B AND C INSPECTION: ONLY WHEN CALLED OUT IN THE PURCHASE ORDER OR CONTRACT SHALL THE SUPPLIER PERFORM THE GROUP B AND C INSPECTION TESTS OF MIL-T-23648.

5.0 DIMENSIONAL DATA IS BASED ON AMERICAN NATIONAL STANDARD ANSI Y14.5M-1982.

6.0 SUGGESTED SOURCE(S) OF SUPPLY:

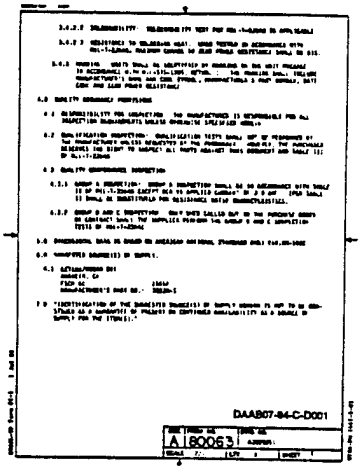
6.1 KETEMA/RODAN DIV
ANAHEIM, CA
FSCM NO: 15454
MANUFACTURER'S PART NO.: SG220-5

7.0 "IDENTIFICATION OF THE SUGGESTED SOURCE(S) OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM(S)."

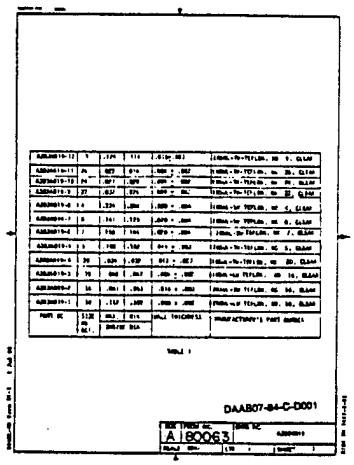
DAAB07-84-C-D001

SIZE	FSCM NO.	DWG. NO.
A	80063	A3D29311
SCALE 2/1	LTR B	SHEET 4

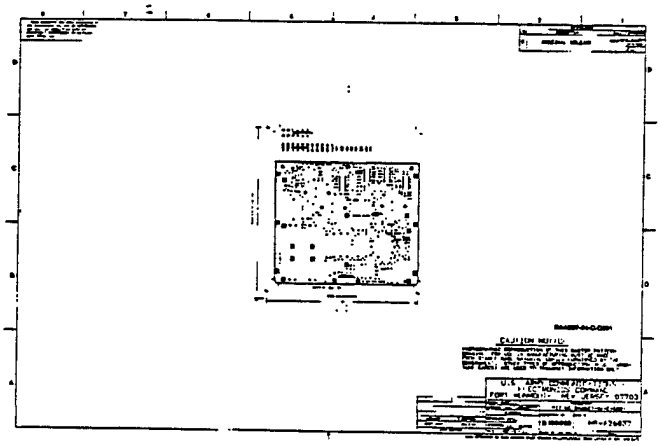
10.4.2 Output Ventura Publisher



D029R004



D039R003



D046R001